

possessing great information on many of the subjects involved in these inquiries; and Captain Maughan, the dockmaster of the London Docks, whose connection with a large commercial body interested in the navigation of the pool, added to his practical acquaintance with the wants and habits of the river generally, made his evidence especially desirable. Messrs. Hay, Peache, and Lucev, barge-owners and lightermen, and Messrs. Tayler, Harvey, and Pocock, coal-merchants, or general wharfingers, in the line between Westminster and Blackfriars-bridges, were examined principally on points not touched upon by the Select Committee of 1840, and upon the probable influence of any measure of embankment upon their respective interests.

On the feelings and opinions of the trade, as a body, it appeared to us to be more consonant to the convenience of the parties to be consulted, more conducive to a right understanding of the measures contemplated, and more likely to result in a well-considered judgment upon these measures, if our chairman were to address himself to one of its members in behalf of the whole; to inclose for their consideration copies and detailed descriptions of the plans; and to express the desire of the commission to have a deliberate opinion from all parties concerned as to the principle upon which, and the mode in which (consistently with the permanent interests of the river), an embankment might be effected in nearest accordance with their own views and wishes. A letter was accordingly addressed, and plans transmitted, to Mr. Tayler, of the firm of Dalgleish and Tayler, extensive coal-merchants and wharfingers in Scotland-yard; and in the appendix a copy of that letter is inserted, as well as of Mr. Tayler's reply.

In addition to these various sources of information on the subject before us, we were favoured with the written opinions of Mr. William Cubitt and Captain Maughan, subsequently to, and in extension of their respective oral examinations; a "Memorandum upon Estuaries and their Tides," contributed by Sir Henry Thomas de la Beche; and, finally, with three letters, and various tables and statements, prepared by Mr. Page, accompanied by sections of the several bridges, and of the river, presenting a large body of valuable matter not bearing exclusively on the local topics and interests more immediately involved in these inquiries, but on the general question of embankment in tidal rivers. With these we have inserted in the appendix, papers, the result of inquiries made under our direction as to the frontages and occupations of the wharfs on the Middlesex side, with the number of barges and other craft in front of each at certain periods of the inquiry; and also as to the heights above Trinity datum of the nearest line of communication parallel with the river between Blackfriars-bridge and Whitehall, shewing the great irregularity in the level of that leading thoroughfare.

The Plan of Mr. Walker.

PLAN A.—The plan of Mr. Walker, referred to in a former part of this report, originally comprised an embankment on both sides of the river, between London and Vauxhall bridges. In his evidence before the commission as to the relative expediency of embanking the Surrey and Middlesex sides of the Thames respectively, Mr. Walker stated his attention to have been principally given to the northern side of the river, adding it to be his own opinion (in which, indeed, almost all the authorities subsequently consulted appeared to concur), that "it would be better to establish a principle, and to see it working in a portion of the river in the first instance," and to make the first embankment on the northern shore. The course of inquiry, therefore, pursued in his examination by the commission, had reference principally to these considerations.

The lines of Mr. Walker's plan are those shown upon plan A in the appendix. It contemplated the formation of quays along the greater portion of the line, at a level of 3 feet 6 inches or 4 feet above Trinity standard; these quays to become, upon terms to be settled, the property of the respective parties owning the present wharfs, of which the embankment was, in fact, to be considered an extension.

A continuous solid embankment, however, having been deemed impracticable throughout

the whole line, Mr. Walker's plan suggested four exceptions, viz.: one at Northumberland-wharf; a second above Waterloo-bridge, terminating at the bridge-stairs; a third above the Temple gardens; and a fourth commencing at Whitefriars-dock, and terminating at the Bridge-stairs, Blackfriars. At these places he proposed to leave recesses (shown on the plan), varying from 400 to 800 feet in width respectively, and bearing together a proportion of about one-third to the rest of the embankment.

"As the deepening of the navigable channel might tend to draw down the ground of the respective wharfs into the river, it was proposed, where required, to support the same by close piling in the line of the embankment, the top of this piling not to be above the level of the ground where it is driven." The main body of this embankment Mr. Walker proposed to construct of materials to be obtained from the bed of the river; the embankment-wall, excepting at Somerset-house where the wall was to be faced with stone, being of brick, with stone dressings only.

Of Mr. Walker's plan, a roadway formed no essential feature. In the event of a terrace or a railway being thought desirable, he proposed that it should be at least 50 feet in width; that, commencing in the neighbourhood of Whitehall, it should be carried over both the embankment and recesses, upon flat arches of 100 feet span, at such an elevation generally above the river as would enable the public in the use of it to communicate with Hungerford, Waterloo, and Blackfriars-bridges, at the level of their respective roadways. With the last-mentioned of these bridges it would end.

Assuming, therefore, the height of Mr. Walker's embankment, throughout, to be, at high water, four feet above Trinity datum, the elevation of the roadway of this terrace above it would vary at different places; at its commencement at Whitehall it would be from five to six feet, at Hungerford and Blackfriars-bridges 27 feet, and at Waterloo-bridge 37 feet above the same standard. To a spectator from the river, it would in each case present, with the addition of its balustrades, an elevation about three feet higher.

As the fall of the tide would, throughout the whole line of the embankment, produce, to the eye, a corresponding addition to its base, the river front of the terrace and embankment together would, at times of ordinary low water, have gained an apparent addition to its height of about 16 feet; making its extreme elevation above low water, with the balustrades, about 56 feet.

The estimated expense of Mr. Walker's embankment, as stated to the select committee of 1840, assuming it to be carried to the Horse-ferry-road, was 300,000*l.* In his evidence before the commission no proportion of this amount was assigned to the shorter distance since contemplated; but it is probable that, upon the embankment above Westminster-bridge, a small portion only of that amount would have been expended.

The erection of a terrace (if it were desired) as a separate superstructure, with its piers, arches, and roadway together, would, in Mr. Walker's opinion, involve a further expense of about 400,000*l.*; making the estimated cost, therefore, of the terrace and embankment combined, between 600,000*l.* and 700,000*l.*

The plan of Mr. Walker, as we have already stated, excited considerable opposition in Parliament in the session of 1840, from the wharfingers and others interested in the trade of this locality. It was then directed exclusively to the principle of a solid embankment, subject to the exceptions already referred to, as to recesses in certain portions of the line.

The objections urged against it at that period had reference to its alleged interference with the river frontage, of which, though a large portion, in the opinion of the commission, might, undoubtedly, have been improved by the adoption of such a measure; yet a still larger had been appropriated to purposes dependent upon its proximity to the water side, and adapted principally to the habits of the coal-trade.

These objections, it should be stated, though the objections of a majority of the parties affected, were not universal. It was alleged by Mr. Walker that many wharfingers were desirous of availing themselves of the privilege to embank, upon the terms then proposed

by the city, viz.—the payment of 1*d.* per annum for every square foot of ground acquired from the river.

It was objected, however, that assuming this to be permitted, a measure so partial in its operation could not fail to be injurious to a large body of the trade, by creating recesses of indefinite width, uncertain as to the time of their existence, and in the meantime favouring the accumulation of mud.

The evidence of Mr. Walker upon all these points, together with the evidence of those who, on these and other grounds, were opposed to the principle of his embankment, has been before the public now for a period exceeding three years, in the report of the select committee already referred to. No doubt, it appears to us, can exist, upon a perusal of that evidence, that it exhibits a manifest preponderance of feeling on the part of the trade adverse to the plan before that committee.

The object of the commission, therefore, in calling Mr. Walker before them, was not to re-open the discussion of 1840, but, looking to the result of that discussion, his subsequent survey of the river in 1841, and the probability, from these and other causes, of his having communicated with parties interested in the northern shore of the river within the intervening period, to ascertain whether he had seen reason to alter his opinions or to modify his plan, and especially whether he were prepared to bring the question again under their consideration in a shape that might justify them in recommending its adoption.

From our examination of Mr. Walker on these points, his views appeared to have undergone no change; and with reference to the concurrence which his suggestions were now likely to receive on the part of wharfingers and others interested in the line, we found him unprepared to inform us either as to the extent to which such concurrence might be depended upon, or to which the commission might reasonably consider itself entitled in reviving the consideration of his plan. One of three alternatives appeared to us to be inevitable; either that such concurrence should be obtained in the first instance, and throughout the whole line, or that considerable sums of money must be expended in compensations; or, assuming the impossibility of the first of these alternatives, and the inexpediency of the second, that the embankment must proceed in small and sometimes widely detached portions of the whole line.

The latter of these alternatives would justify a revival of all the objections to the proposed embankment of 1840, and render the execution of a terrace or river road utterly impracticable.

We are not unmindful that Mr. Walker has endeavoured to provide against these contingencies by recesses sufficient in extent, and so arranged in regard to locality as to meet the wants of a large body of the trade; but we cannot but remark, at the same time, that these recesses stood in Mr. Walker's plan of 1840; that he could then give no definite assurance as to the time by which they would be completed, or the period for which they might be available; and that, upon being questioned by ourselves, as to the grounds upon which he had determined the proportions of his recesses to those of his solid embankments, he admitted that "he had calculated upon the feeling of individual proprietors in the line, of which, however, he knew little."

In stating to the commission the origin and purposes of his survey of 1841, Mr. Walker observed, "The great object of the city in that survey, as it appears to me, has been to determine a river line, to which parties making applications might, but beyond which they must not, extend their premises; and, to shew how the navigable part of the river may be deepened and improved, without injuring the berths for barges where parties do not wish an extension of solid wharf, which is in no instance proposed to be compulsory."

Upon being questioned by the commission, whether that opinion should be understood as applying to the plan under consideration, he replied:

"I have stated that at present there is no intention of anything compulsory, so far as I am aware of. I am not sure that it would not be expedient for a considerable time to leave